IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): A price and risk evaluation system for evaluating a price distribution or a risk distribution for a financial product or its derivatives, comprising:

an initial value setter configured to input at least one of initial values of a price, a price change rate, and a price change direction for a financial product or its derivatives;

an evaluation condition setter configured to input evaluation conditions including at least time steps and a number of trials;

a Boltzmann model analyzer configured to repeat simulation of price fluctuation based on a Boltzmann model using a Monte Carlo method to obtain a price distribution or a risk distribution;

a velocity/direction distribution setter configured to input probability distributions of the price, the price change rate, and the price change direction for the financial product or its derivatives into the Boltzmann model analyzer;

a random number generator configured to provide a series of random numbers used in the Boltzmann model analyzer; and

an output unit configured to output analysis results of the Boltzmann model analyzer, wherein

the Boltzmann model analyzer includes a sampling unit, a price-fluctuation simulation unit, and a probability density calculation unit, and

the Boltzmann model analyzer, after receiving at least one of initial values of the price, the price change rate, and the price change direction for the financial product or its derivatives from the initial value setter, a sampling width from the sampling unit, at least necessitated one of probability-distributions of a price, a price change rate and a price change direction from the velocity/direction distribution setter, and the random number from the

random number generator, repeats by the price-fluctuation simulation unit to simulate a price immediately after the sampling width, a price change rate immediately after the sampling width or a price change direction immediately after the sampling width from a price immediately before the sampling width, a price change rate immediately before the sampling width or a price change direction immediately before the sampling width based on the Boltzmann model using the Monte Carlo method within the range of the evaluation condition set by the evaluation condition setter, and integrates prices immediately after the sampling width, price change rates immediately after the sampling width or price change directions immediately after the sampling width to obtain a probability density by the probability density calculation unit.

Claim 2 (Original): The price and risk evaluation system according to claim 1, wherein:

the initial value setter acquires the initial values of the price, the price change rate, and the price change direction for the financial product and the derivatives from a market database storing information on financial products or their derivatives, and supplies them to the Boltzmann model analyzer means; and

the velocity/direction distribution setter receives past records for a financial product or its derivatives from the market database, and then generates a probability density function with variables concerning the price, the price change rate, the price change direction, and time steps for supplying the probability density function to the Boltzmann model analyzer.

Claim 3 (Original): The price and risk evaluation system according to claim 1, further comprising a total cross-section/stochastic process setter configured to supply information

concerning setting a sampling time width in the simulation of price fluctuation to the Boltzmann model analyzer, wherein:

the total cross-section/stochastic process setter acquires a price fluctuation frequency and a price change rate for the financial product or its derivatives from a market database storing information on financial products or derivatives, and supplies ratios of the price fluctuation frequency to the price change rate into a total cross-section for a Boltzmann's equation.

Claim 4 (Original): The price and risk evaluation system according to claim 1, wherein:

the velocity/direction distribution setter acquires past records for a financial product or its derivatives from a market database storing information on financial products or derivatives, and estimates a distribution of the price change rate for the financial product or its derivatives using a Sigmoid function and its approximation form, and supplies the estimated distribution of the price change rate to the Boltzmann model analyzer.

Claim 5 (Original): The price and risk evaluation system according to claim 1, wherein:

the velocity/direction distribution setter acquires past records for a financial product or its derivatives from a market database storing information on financial products or its derivatives, determines a set of Sigmoid function parameters with the price change rates using the past market data for a distribution of the price change rate, and supplies the price distribution to the Boltzmann model analyzer.

Claim 6 (Original): The price and risk evaluation system according to claim 1, wherein:

the velocity/direction distribution setter acquires past records for a financial product or its derivatives from a market database storing information on financial products or their derivatives, estimates the probability distribution of the price change direction for the financial product or its derivatives from the past records, and supplies the probability distribution to the Boltzmann model analyzer.

Claim 7 (Original): The price and risk evaluation system according to claim 6, wherein:

the velocity/direction distribution setter estimates the probability distribution of the price change direction for the financial product or its derivatives taking into account a correlation between a probability of price-up and a probability of price-down.

Claim 8 (Original): The price and risk evaluation system according to claim 1, wherein:

the velocity/direction distribution setter receives past records of a financial product or its derivatives from a market database storing information on financial products or their derivatives, and supplies the probability distribution to the Boltzmann model analyzer through generating the probability distributions taking into account a correlation between a distribution of the price change rate and a distribution of the price change direction for the financial product or its derivatives.

Claim 9 (Original): The price and risk evaluation system according to claim 1, wherein:

the velocity/direction distribution setter generates homogeneous probability distributions independent of the price, or heterogeneous probability distributions dependent on the price, with regard to the probability distributions of a price change rate and a price change direction, and supplies the probability distributions to the Boltzmann model analyzer.

Claim 10 (Original): The price and risk evaluation system according to claim 1, wherein:

the Boltzmann model analyzer uses a linear Boltzmann model or a non-linear Boltzmann model in order to price a financial product and its derivatives, the linear Boltzmann model using a cross-section independent of probability density or flux for the financial product or its derivatives in a Boltzmann equation, while the non-linear Boltzmann model using a cross-section dependent on the probability density or the flux for the financial product or its derivatives in the Boltzmann equation.

Claim 11 (Previously Presented): The price and risk evaluation system according to claim 1, wherein:

the Boltzmann model analyzer provides a price distribution or a risk distribution for the financial product or its derivatives by using the flux defined in a Boltzmann equation as a bi-product of a probability density function and a price change rate per unit time for the financial product or its derivatives.

Claim 12 (Original): The price and risk evaluation system according to claim 1, wherein:

the Boltzmann model analyzer applies a track-length estimator method using fluxes associated with the financial products or their derivatives, as a variance reduction method for

a Monte Carlo calculation, to evaluate a probability density at an arbitrarily specified point of time.

Claim 13 (Original): The price and risk evaluation system according to claim 1, wherein:

the Boltzmann model analyzer makes use of a point detector method, which is effective in a neutron transport Monte Carlo simulation, as a variance reduction as the variance reduction method to evaluate a price or a risk distribution at an infinitesimal price band or an infinitesimal time zone for the financial product or the derivatives, using all of or a part of the price fluctuation events observed in the simulation.

Claim 14 (Original): The price and risk evaluation system according to claim 1, wherein:

the Boltzmann model analyzer calculates an adjoint probability density or an adjoint flux reduced from an adjoint Boltzmann equation for a price fluctuation for the financial product or its derivatives, and weights sampling values proportional to the adjoint probability density or the adjoint flux, thereby reducing variance.

Claim 15 (Previously Presented): The price and risk evaluation system according to claim 1, wherein:

the velocity/direction distribution setter supplies a correlated probability density distribution to the Boltzmann model analyzer, correlated probability densities being estimated taking correlations between price change rate distributions and price change direction distributions into account for any financial product and its derivatives.

Claim 16 (Original): The price and risk evaluation system according to claim 1, wherein:

the Boltzmann analyzer conducts procedures for evaluating a price or a risk distribution for a financial product, and for applying the Ito's theorem to obtain a price or a risk distribution for its derivatives.

Claim 17 (Original): The price and risk evaluation system according to claim 1, wherein:

the Boltzmann analyzer includes algorithms concerning multiple processing in simulations and reducing the analysis results of the multiple processing to obtain the probability density distribution.

Claim 18 (Previously Presented): A computer readable medium storing program instructions which, when executed by a computer, results in the performance of the steps comprising:

inputting at least one of initial values of a price, a price change rate, and a price change direction for a financial product or its derivatives;

setting a sampling width;

inputting at least necessitated one of probability-distributions of a price, a price change rate and a price change direction;

inputting a random number;

repeating to simulate a price immediately after the sampling width, a price change rate immediately after the sampling width or a price change direction immediately after the sampling width from a price immediately before the sampling width, a price change rate immediately before the sampling width or a price change direction immediately before the

sampling width based on a Boltzmann model using a Monte Carlo method within the range of the evaluation condition; and

integrating prices immediately after the sampling width, price change rates immediately after the sampling width or price change directions immediately after the sampling width to obtain a probability density.

Claims 19 through 36 (Cancelled).